

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 2012		2. REPORT TYPE		3. DATES COVERED 00-00-2012 to 00-00-2012	
4. TITLE AND SUBTITLE Configuring Battalion File Servers				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army Signal Center of Excellence, Army Communicator, Signal Towers (Building 29808), Room 713, Fort Gordon, GA, 30905-5301				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 2	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

CONFIGURING BATTALION FILE SERVERS

By CPT Matthew Sherburne

This is how one deploying brigade combat team filled the communications needs of its warfighters.

The 2nd Brigade Combat Team, 2nd Battalion, 325th Airborne Infantry Regiment was put on alert as a part of the Global Reaction Force following the earthquake that struck Haiti on 12 January 2010.

All of the brigade's equipment was pushed to the equipment flight line in preparation for setting up a standard Joint Network Transport Capability communications architecture at Toulouse International Airport.

Prior to the deployment, we conducted several airborne field exercises with minimal usage of the communications architecture to include digital collaboration. Services such as SharePoint, widely used in garrison, were barely used due to the low-bandwidth satellite connectivity between the battalion command post nodes and brigade JNN where the main servers are located. With no server operating system on hand, the battalion S6 shop resorted to locally sharing out folders on laptops. The main issue with this is Microsoft has a 10-user limit to accessing those shared resources on standard workstations. Furthermore, laptops are not designed to deal with the increase in data processing. Nor do they have a backup system to ensure no loss of data. Battalion-level file servers must be a Modification Table of Organization and Equipment item in order to enhance combat effectiveness and collaboration.

I joined the battalion in August 2010, just three months after returning from Operation Enduring Freedom X. Immediately I began conducting Military Decision Making Process analysis on communications support for the battalion as we prepared to head to Joint Readiness Training Center on a Forces Command tasking to validate the newest Full-Spectrum Operations Training lanes in September 2010. This became a very unique situation in which we were not allowed to bring our CPN with us because of the GRF mission. We pulled all unclassified services from the Fort Polk NEC which allowed the battalion command and staff to communicate back to Bragg and handle the usual requirement of NCOERs, OERs, and other soldier administration tasks. I realized firsthand the same issues the battalion experienced with data collaboration and file sharing in the absence of a proper file server. The interim solution I could provide as a stop gap was AKO group folders.

The automations Soldiers in the shop employed the same local folder sharing on user laptops, but again, the issue of a ten user limit became apparent when every company commander and staffer tried to access the latest OPOD documents related to the training exercise. The AKO group folders worked, but extremely slow. Ad-

ditionally, a laptop was set aside to act as a print server for the TOC printers, but the ten user limit also applied.

A month later and I found myself back out in the field for the Battalions Expert Infantryman Badge in October 2010, this time with my CPN, and this time with a file server. My S6 shop went to the Fort Bragg NEC and picked up a copy of the AGM Server 2008 to load on a Dell D630 laptop. Though not ideal, it did allow the battalion staff and command group to share files, collaborate, and print inside the Deployable Rapid Assembly Shelter.

After the EIB, I was tasked to research and design a tactical file server in preparation for our upcoming deployment to Iraq with the intent that we have it by the JRTC rotation in March 2011. Building on my past experience in Afghanistan, I knew the file servers needed to include a UPS, KVM and ruggedized transit case. The file servers themselves only needed to be fast enough to support functions in a 1U rack-mounted configuration. The UPS needed to accept 120 or 240 volts with plug adapters capable of plugging into any style plug in the world. The UPS needed to maintain power to all critical systems for a period of 15 minutes giving enough time to properly shutdown the servers in the event of a catastrophic power failure or recover from a simple tripped circuit breaker. Several months went by during the bidding process through CHES ITES 2H and the server waiver through DA G3. Eventually DA G3/G6 granted the AKM Goal 1 Waiver and the BDE S4 completed the necessary steps for our BN S4 to purchase the file servers in May 2011. To save the Army money, I requested that Dell install major components without wiring and no operating system. I knew my automations Soldiers would be able to finish cabling the major components and install the AGM Microsoft Server 2008. The final contract included two Dell R610 1U servers with RAID 5 comprising of three 1 TB hard drives for a total of 2TB of storage on each server. Packaging Strategies, Inc installed all major components to include an APC Smart-UPS 2200VA, Paragon II P2-UMT242 42-Port, 2 User, 1U KVM Switch, P2-EUST/C Paragon II Enhanced User Station/CAC reader, Raritan 17" T1700 KVM Drawer, and two R610 servers into a 8U black double-entry case.

File-Servers arrive in Iraq

I worked an agreement with the Information Assurance department at Al Asad Air Base to place the file-servers on the strategic network. My shop kept the servers updated weekly with security patches and had zero issues with IA throughout the deployment. After a one-week validation process, my team went to work on shifting all battalion operational data from the main



This equipment was part of the 2nd Brigade Combat Team, 2nd Battalion, 325th Airborne Infantry Regiment's package shipped to operations in connections with the Global Reaction Force following the earthquake that struck Haiti on 12 January 2010.

base-wide strategic file servers to our battalion file servers. I prepared for the fact that we might jump locations after several months and wanted to make sure we were prepared to take our data with us. That moment came when the Brigade ordered our battalion to move 152 miles to Camp Taji in October 2011. At the same time the entire theater prepared to move all tactical units off strategic connectivity and onto JNTC tactical satellite assets.

This worked out perfectly because we did not need to coordinate with the Taji base network to re-establish the file-servers on their network. After setting up our CPN

on the tactical network at Taji, we connected the file-servers and had all data readily available to the battalion. We set up multiple printers through the server to expedite the establishment of the network. We setup a LAN network near as robust as the strategic network from which we left at Al Asad Air Base, Iraq. Accessing brigade shared files on their file-server connected off the JNN was so slow that it would take hours to upload one PowerPoint file. There were only a few instances in which we needed to post files on the brigade file-server so it was manageable. As for our own battalion opera-

tions, if we did not have a local file server and had to rely on the usage of the brigade file server by MTOE, our collaboration efforts would have been slowed to a crawl. Every day between October 2011 and December 2011 the command and staff utilized the file server to update Combat Update Brief slides, disseminate OPODs, and store AARs and patrol briefs.

Battalions require a file server on their local LAN both in Garrison and on deployments for rapid collaboration and continuity in data between garrison and deployment environments. With the usage of AGM Server operating systems, the Army is not spending additional money for the operating system. Less than one week of training for two 25B MOS is all that is needed for an S6 shop to adequately employ a file and print server capabilities. Maneuver battalions are constantly leveraging technology to better command and control the fight. They are keenly aware that battalions that collaborate faster and more effectively will be more successful in engaging with and destroying the enemy or conducting peacetime operations with the highest potential.

CPT Matthew Sherburne is the former battalion S6 for the 2-325 Airborne Infantry Regiment, 2BCT, 82nd Airborne Division. CPT Sherburne holds a Bachelor of Science degree in Electrical Engineering from the U. S. Military Academy.

ACRONYM QuickScan

AAAB – Al Asad Air Base, Iraq
AAR – After-Action Review
AGM – Army Gold Master
AKO – Army Knowledge Online
CPN – Command Post Node
DRASH – Deployable Rapid Assembly Shelter
EIB – Expert Infantryman Badge
FORSCOM – Forces Command
GRF – Global Reaction Force
JNN – Joint Network Node
JNTC – Joint Network Transport Capability
JRTC – Joint Readiness Training Center
KVM – Keyboard, Video, Mouse

LAN – Local Area Network
MDMP – Military Decision Making Process
MOS – Military Occupation Specialty
MTOE – Modification Table of Organization and Equipment
NEC – Network Enterprise Center
NCOER – Non-Commissioned Officer Evaluation Report
OER – Officer Evaluation Report
OPOD – Operational Order
RAID – Redundant Array of Independent Disks
TOC – Tactical Operation Center
UPS – Uninterruptible power supply